RESEARCH/MANAGEMENT
FINDINGS

"Whether young or not-so-young, recreation provides a wide array of opportunities for physical fitness, stress reduction, learning new skills and raising self esteem."

— WISCONSIN STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN, 2000-2005

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From Hunting to Rock Climbing: Adult Participation in Selected Outdoor Activities, Wisconsin Recreation Statistics, 1992-2002

Doug Hemken and Elizabeth Ivers

INTRODUCTION

Wisconsin adults participate in a wide range of outdoor recreational activities, from cross-country skiing to rock climbing to hunting. Walking for pleasure, swimming, wildlife viewing, and fishing remain among the most popular recreational pursuits. Many factors, including age, gender, income, education, and geography, influence rates of participation in these activities.

Several trends are of particular interest to Wisconsin Department of Natural Resources (DNR) managers who are charged with providing a full range of outdoor opportunities and ensuring that all people have the right to use and enjoy natural resources in their work and leisure (Wisconsin DNR 2003). The rates of participation in hunting and fishing, although declining in some regions of the United States (Cordell *et al.* 1995), have remained steady in Wisconsin between 1992 and 2002. Rates of participation in camping have increased. In general, two main demographic trends are expected to affect participation in recreational activities in the coming years: the aging of Wisconsin's population and an overall population increase. As the population ages, managers expect interest in low-intensity activities, like bird watching, to increase, while participation in higher-intensity activities, like in-line skating, will decrease. This shift, however, will be offset somewhat by population growth, which is expected to increase overall participation in most activities.

This report presents key findings from survey data collected between 1992 and 2002 by the DNR on participation in a variety of outdoor activities among Wisconsin residents age 18 and older.

METHODS

The DNR conducted telephone surveys annually from 1992 through 1997, and again in 2002. Each survey was administered by the University of Wisconsin's Survey Center over a 3-4 week period in fall or winter, with a random sample of adults age 18 and over. A total of 3,706 interviews were conducted, with yearly totals ranging from 419 to 800, providing a representative sample of Wisconsin's adult population (Table 1). Response rates varied between 60% and 70%.

In most years, recreation questions worded in accordance with those used in previous state and national studies (e.g., National Park Service 1986, Wisconsin DNR 1991, Cordell et al. 1995) were part of surveys on other topics of interest such as recycling and conservation funding. Information on the age, gender, education, income, and geographic location of each respondent also was collected in each survey. Interviews were brief, generally lasting 15-20 minutes. Due to the limits that this survey strategy placed on the interview time devoted to recreation, only a limited number of questions could be asked in any one year.

In addition, the wording of the questions sometimes changed; hiking, camping, and wildlife-related activities were sometimes lumped together while in other cases they were split into separate categories. For example, "bird watching and other nature study" was addressed as a single question from 1992 through 1996. In 1997 and 2002, this was split into two questions, one about "bird watching" and another about "wildlife viewing." In addition, the answer categories for the income question varied among years. While a few questions were asked every year, most were not asked yearly (e.g., questions about bicycling, hunting, and fishing were asked on every survey while questions about backpacking and downhill skiing were asked only in 1992 and 2002). The result of this variation in wording and sample size is that some recreational activities can be analyzed in more detail and with more accuracy than others.

Hemken (2005) presents a detailed discussion of the statistical analyses used and complete tables of the survey data gathered. Results are presented here as percents of the overall adult population. In addition, the University of Wisconsin Applied Population Laboratory used U.S. Census population projections by sex and age to calculate recreational participation from 2005 through 2020 based on the participation rates by sex and age collected in the 1992-2002 surveys.

Table 1. Sample size of telephone surveys conducted annually 1992-1997, and 2002.

Year of Survey	Sample Size
1992	419
1993	451
1994	521
1995	441
1996	800
1997	628
2002	446
Total	3,706

RESULTS AND DISCUSSION

Of the outdoor activities examined here, the most popular among Wisconsin adults was walking for pleasure (84.4% participation). Other popular outdoor activities include driving for pleasure (69.6%), swimming (60.6%), picnicking (57.1%), and viewing wildlife (53.9%). Nearly as popular were bicycling (47.9%), fishing (47.9%), bird watching/other nature study (47.3%), and hiking (46.4%).

Yearly Variation, Participation Trends, and Projections

With any given outdoor activity, participation varies from year to year. This is due to the changing popularity of various activities, availability of recreation venues, and suitable weather. Recreational participation is also affected by changes in disposable income, free time, and the changing demographic structure of the population.

Of 24 activities assessed for more than one year, 13 activities showed statistically measurable variation from year to year: walking for pleasure, driving for pleasure, swimming, viewing wildlife, bicycling, bird watching/other nature study, day hiking, motor boating, camping, bird watching, nature photography, ATV riding, and cross-country skiing.

Statistical trends, as opposed to statistically measurable variation, are difficult to spot in the data because the yearly series are incomplete for many activities. Moreover, what may at first appear to be a statistical trend for some activities where the data are more complete, like driving for pleasure or bird watching/other nature study, is in fact the result of only one unusual year and therefore cannot be relied upon with confidence. For a very few activities, however, there do seem to be observable trends between 1992 and 2002: bicycling and camping appear to have increased in popularity over the last decade, while participation in cross-country skiing seems to have decreased. Other activities, like hunting and fishing, have seen little change (Figure 1).

The total number of people participating in each recreational activity is projected to increase through 2020 for most activities, with the fastest growth occurring before 2010 and slowing growth by 2020. Those activities that are most popular with individuals in their twenties, such as mountain-biking, in-line skating, downhill skiing, and rock climbing, are projected to see stagnating or declining participation rates sometime after 2015 as a result of an aging population.

Geography

Participation in outdoor recreation varies from region to region. This variation can be due to differences in natural resources, differences in available recreational facilities, or differences in the recreational preferences of an area's residents.

For planning and program administration, DNR divides Wisconsin into five regions: Northern, Northeast, West Central, South Central, and Southeast. Of the 32 activities included in these surveys, about half (17) show measurable variation in participation rates among residents from region to region. Activities which have level participation rates across the state include walking for pleasure, driving for pleasure, bird watching/other nature study, hiking, running, photography, mountain biking, ice skating, cross-country skiing, backpacking, jet-skiing, horseback riding, and rock climbing.

Because the Southeast Region has 37% of Wisconsin's adult population, the region carries the greatest weight in determining the statewide popularity of outdoor activities. The Southeast Region is also the most urbanized part of Wisconsin and has the lowest participation rates in 10 of the activities with measurable variation: wildlife viewing, bird watching, fishing, hunting, camping, camping with a tent, camping with an RV, motor boating, canoeing, and ATV riding. These activities are often associated with less urban settings. The Southeast Region has higher participation rates than the rest of the state in three activities: swimming (64.7%), bicycling (50.2%, statistically tied with several other regions), and sailing (8.6%).

In some ways the Northern Region represents the opposite end of the recreation participation spectrum. In contrast to the Southeast, the Northern Region has the lowest participation rates among residents for bicycling (38.5%), golfing (18.3%), and sailing (4.5%, statistically tied with several other regions). At the same time, the Northern Region has the highest participation rates in the state for wildlife viewing (67.6%), bird watching (42.6%), fishing (60.0%), hunting (40.9%), day hiking (46.9%), motor boating (52.1%), canoeing (25.8%), ATV riding (25.7%), and snow mobile riding (22.9%).

The Northeast Region is distinctive for its high participation rate in golfing (37.1%) and for its low participation in day hiking (35.8%). The West Central Region is distinctive for its high participation in camping with an RV (18.1%) and downhill skiing (18.4%) and for its low participation in swimming (54.3%). The South Central Region is distinctive for its high participation in camping with a tent (30.7%) and its low participation in snow mobile riding (7.1%) and downhill skiing (5.0%).

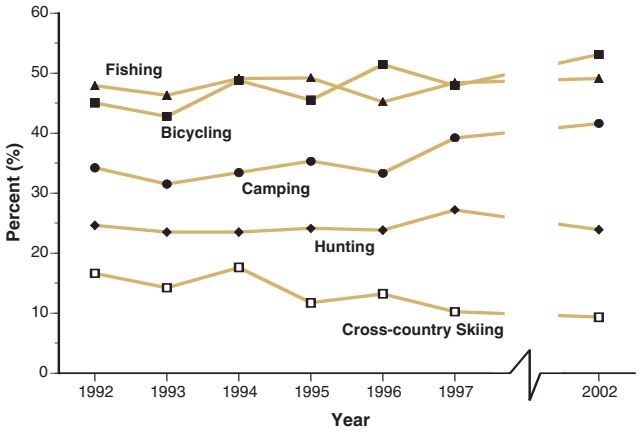

Figure 1. *Adult participation rates (%) in selected recreational activities* ***by year****.*

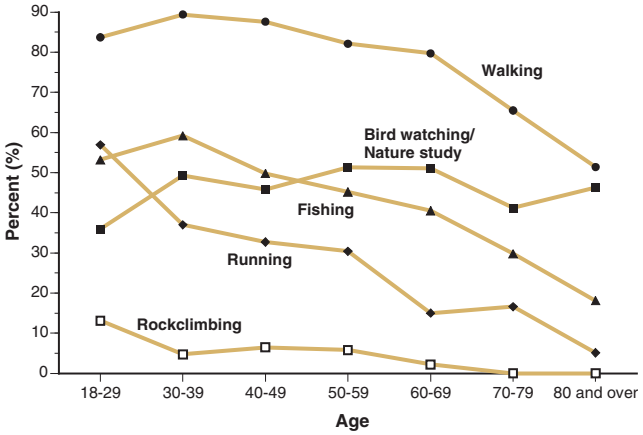

Figure 2. *Adult participation rates (%) in selected recreational activities* ***by age group****.*

Demographics

Age. Every outdoor activity shows measurable differences in participation rates across age groups (analyzed in 10-year groups). For most activities, participation rates peak when people are in their younger decades and decline after age 40 or 50. This fact, along with the decline in population shared by each age group currently age 50 or older, combine to greatly reduce numbers of outdoor participants in the groups age 50 and above.

The notable exceptions to this overall pattern are bird watching/other nature study and just bird watching. Bird watching/other nature study peaks among those in their thirties and does not fall significantly in older groups. Bird watching (as a separate category) peaks among those in their fifties and remains high even among those 80 or older (Figure 2).

Like bird watching, several other activities reach their peak participation rates beyond age 30. Cross-country skiing and wildlife viewing have their highest participation rates among those in their forties. Walking for pleasure (Figure 2), swimming, picnicking, motor boating, fishing, hunting, hiking and day hiking, nature photography, golfing, camping with an RV, and backpacking all achieve their respective peaks among those in their thirties.

All other activities are at their most popular beginning with those in their twenties. Activities, however, vary considerably in the duration of this popularity. Driving for pleasure maintains a steady popularity through those in their fifties. The peak popularity of other activities, such as bicycling, ice skating, and sailing, is focused more narrowly among those in their twenties and thirties. A few activities have their widest popularity among those in their twenties, with a steadily declining popularity among progressively older segments of the population; these include running (Figure 2), camping with a tent, mountain biking, canoeing, ATV riding, in-line skating, downhill skiing, jet-skiing, and rock climbing.

Gender. Somewhat more than half of the activities examined in these surveys (19 of 32 activities) have a measurable difference in participation rates between men and women. Women have higher participation rates than men in bird watching and in-line skating (Figure 3). Men have higher participation rates than women in swimming, wildlife viewing, bicycling, fishing, day hiking, motor boating, camping, golfing, camping with a tent, hunting, mountain biking, canoeing, ATV riding, camping with an RV, backpacking, sailing, and rock climbing.

Income. Survey respondents' household income is positively associated with most outdoor activities (21 of 31 activities for which there are available data). For all activities with measurable differences in participation across income groups, participation is lowest where household income is lowest. As income increases, participation increases. For some activities, participation continues to increase in the higher income brackets, while for other activities, like hunting and snow mobile riding, participation tapers off or declines in the higher income brackets (Figure 4). There is no measurable association between income and bird watching/other nature study, running, bird watching, ice skating, ATV riding, in-line skating, snow mobile riding, backpacking, jet-skiing, or rock climbing.

Education. Most activities (28 of 32) have some measurable association with education (Figure 5). In general, participation in outdoor recreation increases across education categories. Only three activities showed declining participation across education levels: hunting, ATV riding, and snow mobile riding. The activities that do not vary measurably across education levels include fishing, camping with an RV, jet-skiing, and rock climbing.

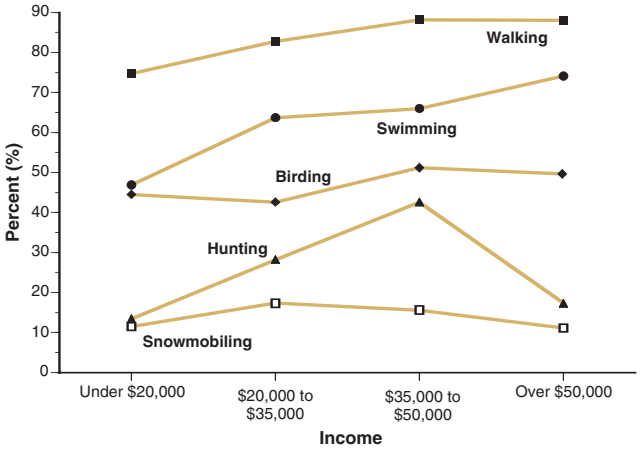

Figure 4. *Adult participation rates (%) in selected recreational activities* ***by annual household income level****.*

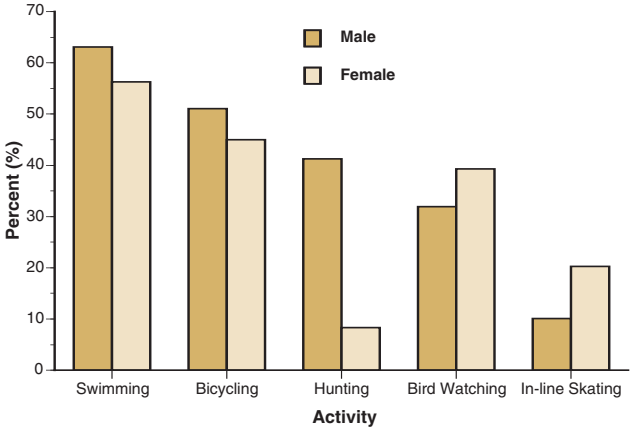

Figure 3. *Adult participation rates (%) in selected recreational activities* ***by gender****.*

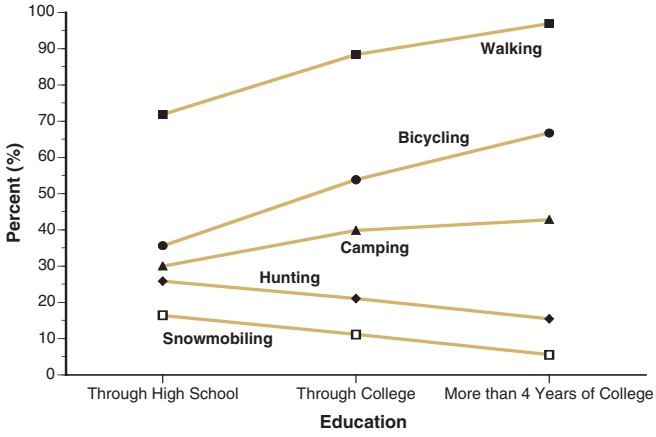

Figure 5. *Adult participation rates (%) in selected recreational activities* ***by education level obtained****.*

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RESEARCH RECOMMENDATIONS

The DNR's recreation participation research could be extended and improved by taking several key measures. First would be to develop an explicit and consistent research focus and a consistent set of outdoor activities to be included in future surveys. Possible research directions could include: what activities are currently most popular on DNR managed properties; how participation rates change over time, particularly in activities that provide funding for DNR programs; or how future demographic trends will affect recreational use of DNR properties.

Another improvement would be to conduct participation research on a regularly repeated schedule. While the analysis above suggests that not every question need be asked every year (because the year-to-year variation is seldom noteworthy), either running the entire survey periodically or running rotating portions of the survey every year would provide more consistent and better quality data. Committing resources to a recreation survey on a regular basis would allow more detailed questions to be pursued when needed, would facilitate the methodological studies appropriate for quality control of survey data, and would reduce the need to reconcile questions of slightly different wording. This would also make it possible to ensure that questions that identify the participation patterns of rare populations (e.g., the disabled and non-white ethnicities) are asked in every wave of the survey. When such questions are only occasionally asked, the result can be too few data for meaningful analysis.

Several further steps could be taken in the analysis of outdoor activities. One would be to examine the selected activities for clusters of activities that individuals pursue (e.g., fishing and boating or hunting and wildlife viewing). Another step would be to model the joint effects of geographic and demographic variables on recreation participation (i.e. in a logistic regression). This would help in understanding the simultaneous effects of age, education, and income, which are correlated. A more ambitious analysis would be to match these data with geographical information on natural resources and recreational facilities used for each activity. Participation could be analyzed in terms of the number of sites nearby and their distance from participants. Results from such an analysis could be useful to recreational planners.

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